POINT PRESSURE

MECHANICAL NEUROMODULATION DEVICE TO RESTORE MOBILITY AND BALANCE IN STROKE PATIENTS

Analysis of the Research Conducted

GLOBAL DATA

1 OUT OF 4 ADULTS WILL SUFFER A STROKE IN THEIR LIFE

- **12.2 million** new stroke cases each year.
- **101 million** stroke survivors worldwide.
- **143 million** healthy life years lost due to stroke-related disability.
- **Between 20% and 25%** of stroke survivors require full physical assistance to walk.

POINT PRESSURE SURA® IS A MEDICAL DEVICE THAT IMPROVES QUALITY OF LIFE OF STROKE PATIENTS.

POINT PRESSURE SURA® is an innovative and accessible solution that; applying a mechanical somatosensory stimulation in motor points of key muscles, generates a bottom stimulus. This bottom up stimulus allows patients to have better motor control, and, with training, regain balance, speed, strength and mobility.

CONCLUSIONS

Use of POINT PRESSURE SURA® on lower limbs for 8 weeks 3 times per week during rehab sessions shows significant improvements in the functionality of patients after stroke:

- **Greater balance and reduced risk of falls:** A 17.9% improvement in the Berg Balance Scale score, shifting **from moderate to low risk of falls**. SURA is directly associated with a significant reduction in risk of falls and increased safety while walking.
- **Improved walking speed:** A **34.6% reduction in time** on the 10-meter walk test, reflecting faster and more efficient movement, and an overall improvement in functionality.
- **Increased muscle strength:** An average **increase of 27.7%** in muscle strength of key lower limb groups, essential for walking and balance.
- **Optimized muscle activation:** Improved coordination and activation of essential muscle groups, such as the quadriceps and glutes, as recorded by electromyography.
- **Increased joint mobility:** An average **21% improvement** in the range of motion in hips, knees, and ankles, promoting greater flexibility and functional capacity for walking.

MUSCLE ACTIVATION

- **Greater Muscle Activation:**

Electromiography recordings show an average increase of 18% in the activation of major muscle groups such as quadriceps, glutes, and hamstrings. This increase reflects an improvement in muscle recruitment.

- **Improved Neuromuscular Coordination:**

Evidence indicates more efficient synchronization among the evaluated muscles, reducing latency time and enhancing movement quality. This progress promotes more precise motor control.

- **Reduction in Muscle Imbalances:**

Data reveal a 25% decrease in activation asymmetries between limbs, contributing to a more stable, balanced, and functional gait.

- **Support in Functional Activities:**

The improvement in muscle activation and coordination enables patients to perform movements such as walking and standing up with greater efficiency and reduced perceived effort.

RANGE OF MOTION

- **Increase in Range of Motion:**

An average increase of 21% in hip, knee, and ankle mobility was observed in the "Intervention" group. This improvement reflects greater joint flexibility.

- **Reduction in Joint Restrictions:**

Patients treated with SURA showed a 28% reduction in joint limitations, enabling broader and smoother movements.

- **Specific Functional Improvements:**

The enhanced range of motion allowed patients to perform daily activities, such as walking and maintaining balance, more effectively.

- **Positive Impact on Gait and Balance:**

The increase in range of motion in the lower limbs contributes to better alignment and stability during gait, improving both movement efficiency and safety when walking on uneven surfaces.

STRENGTH

- **Global Strengthening:**

An average increase of 27.7% in the strength of key movements such as hip, knee, and ankle flexion, extension, abduction, and adduction has been observed.

- **Improvement in Functional Capacity:**

The significant increase in muscle strength enables patients to perform daily activities, such as walking, standing up, and remaining upright, with greater ease, safety, and less perceived effort.

- **Reduction in Fall Risk:**

The enhanced strength in the lower limbs, combined with improved muscular stability, reduces the risk of falls.

BALANCE

- **Standing with eyes closed:**

A significant improvement of 9.92% is evident in the weight distribution between the affected leg and the contralateral leg.

- **Standing with feet together:**

The results show an improvement of 20.35% in the weight distribution between both limbs.

- **Standing in a natural position:**

An improvement of 16.19% is observed in the weight distribution between the affected and unaffected limb.

ClinicalsTrials.gov: NCT06395272

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